



2.0 Site Description

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This section contains a brief description of the Libby Site. Specific details include descriptions of:

- Location;
- Mining operations;
- Nature of the potential threat of hazardous substances; and
- Recent agency activities.

2.1 Location

The Site is located in Libby, Montana. Libby lies in the northwest corner of Montana in Lincoln County approximately 35 miles from the Idaho border and 65 miles south of the Canadian border. Libby is bounded to the north by the Kootenai River and surrounded to the south by the Cabinet Mountains and Cabinet Mountain Wilderness area. The Site lies within Sections 3 and 10, T30N, R31W of the Libby Quadrangle. A Site map is contained in Figure 2-1.

Libby sits in the Kootenai River valley at an elevation of 2,066 feet and is surrounded by the Kootenai National Forest. The Libby Dam confines the Kootenai River about 17 miles north of town and creates the 90 mile long Lake Koocanusa that extends north into Canada. Montana Highway 37 parallels the Kootenai River and Lake Koocanusa and connects Libby to U.S. Highway 93 to the north. U.S. Highway 2 runs through Libby and connects Libby to the nearest towns of: Kalispell 90 miles to the southeast and Troy 18 miles to the northwest. The Burlington Northern Railroad maintains the railroad that runs through Libby connecting Libby to Whitefish, Montana and Spokane, Washington. Freight service runs daily and Amtrak service is available 4 days a week. Libby also has a small airport with a 5,000 foot runway.

2.2 Mining Operations

Hydrated magnesium silicates in which varying amounts of iron (Fe⁺⁺), sodium (Na⁺), and aluminum (Al³⁺) can substitute for calcium and magnesium in the solid solution. Vermiculite, an hydrated magnesium silicate mineral that resembles mica in appearance, was discovered just outside Libby, Montana in 1881 by gold miners. Initial mining operations began in the early 1920's on the vermiculite ore body located approximately 7 miles northeast of Libby. By the late 1920's, operations were at full scale under the name of the Universal Zonolite Insulation Company (Zonolite).

The Zonolite mining operations of the vermiculite ore body were fairly typical. Vermiculite ore was strip mined using conventional equipment and then processed in an on-site dry mill to remove waste rock and overburden. The processed ore was then trucked down Rainy Creek Road to a screening plant, which separated the milled ore into five size ranges for use in various products. From there, the material was shipped, predominantly by rail, across the country. The processed ore was either used as is for various products or was expanded, also known as exfoliated, prior to use. Expansion is accomplished by heating the ore, usually in a dry kiln, to approximately 2,000 degrees Fahrenheit. The heating process boils the water trapped in the crystalline matrix of the vermiculite, thus expanding the material by a factor of 10 to 15 fold.

In 1963, W.R. Grace & Co. bought the Zonolite mining operations and operated it in a similar fashion until the Mine closed in 1990. A wet milling process was added to the operation in 1975, which operated in tandem with the dry mill, until the dry mill was taken off line in 1985. Expansion operations at the Export Plant ceased in Libby sometime prior to 1981, although this area was still used to bag and export milled ore until mining operations were stopped in 1990. In 1994 W. R. Grace & Co. sold the mine area to the Kootenai Development Company, who are the current owners.

In 1985, W.R. Grace & Co. reported reaching a vermiculite production high at the Libby mine of 240,000 tons per year or 50 percent of the vermiculite mined in the U.S. (Grace, 2000). Before the mine closed in 1990, Libby produced about 80 percent of the world supply of vermiculite (Peronard, 2000). Commercially exploited vermiculite is used in agricultural, horticultural, industrial, and construction products such as building insulation and soil conditioner (TVA, 2000). The vermiculite mining operations in Libby occurred at the following four main locations:

- Mine and Mill located on Rainy Creek Road on top of Zonolite Mountain;
- Screening Plant and Railroad Loading Station located astride the Kootenai River at the intersection of Rainy Creek Road and Highway 37, commonly referred to as the Screening Plant;
- Expansion/Export Plant, commonly referred to as the Export Plant, located off Highway 37 where it crosses the Kootenai River; and
- Expansion Plant believed to have been located at the end of Lincoln Road, near 5th Street. The Lincoln Road Expansion Plant apparently went off line sometime in the 1950's, and has since been demolished. Investigations are underway to determine the exact location of this facility.

2.3

Nature of Potential Threat of Hazardous Substances

The vermiculite ore body in Libby contains naturally occurring form of asbestos. Asbestos is a generic term for a group of six naturally-occurring fibrous silicate minerals. The predominant fibrous habit of minerals found at the Libby Site are of the tremolite-actinolite solid solution series known as amphibole asbestos. Asbestos is a recognized human carcinogen and is classified as a hazardous substance as defined by 40 CFR Section 302.4 of the National Contingency Plan (NCP).

Although people can be exposed to asbestos by ingestion (eating, drinking) or possibly on the skin, these are not major exposure routes and do not pose nearly as great a risk as inhalation of airborne asbestos fibers, the primary exposure route. The fibers that are most dangerous to human health are those fibers that are longer than 5 microns and especially those longer than 10 microns, with a length to width ratio of 5:1. These are the fibers that are of respirable size.

Inhalation of asbestos fibers is known to cause three major respiratory diseases: asbestosis, lung cancer and mesothelioma. Asbestosis is a restrictive lung disease which can be fatal. Asbestosis is a disease characterized by fibrotic scarring of the lung and is caused specifically by exposure to asbestos mineral fibers. Mesothelioma is a cancer of the lining of the chest and abdominal cavities. The combination of smoking and exposure to asbestos greatly increases the risk of developing one of these lung cancers.

During operation of the Libby mine and related processing facilities, residents reported that large amounts of dust and fugitive emissions were released into the environment (Peronard, 2000). Residents describe having to halt baseball games as large dust clouds swept through

the ballfield area from the piles of vermiculite at the Export Plant (Peronard, 2000). Data collected by W.R. Grace in 1975 shows levels of airborne asbestos in downtown Libby of 1.5 fibers/cubic centimeter (cc), over 10 times the current occupational limits of 0.1 fibers/cc (Peronard, 2000). Data collected by a contractor to EPA in the 1980's measured airborne asbestos levels at 0.5 fibers/cubic centimeter (cc), five times higher than today's occupational limits, 4.5 miles from the mine site (Peronard, 2000). The contaminated dust and soil created by these fugitive emissions likely remains in the environment and can be re-entrained leading to inhalation exposures. There is extensive literature indicating that at various times workers at the mine site, mill and processing facilities were exposed to high levels of asbestos from fugitive dust emissions (Peronard, 2000). Other environmental releases of asbestos occurred from workers bringing home dust covered clothing and personal vehicles. It is known that asbestos fibers accumulate in indoor environments, and re-entrainment of indoor fibers can multiply indoor ambient air levels 50-fold (Peronard, 2000).

The threat of exposure to workers and residents exists through inhalation of amphibole asbestos at the two former vermiculite processing facilities, the Screening Plant and the Export Plant (Peronard, 2000). Non-enclosed buildings at both facilities contain significant amounts of dust containing asbestos fibers of the length and type of concern (Peronard, 2000). This dust is easily disturbed leading to additional potential inhalation exposures. Surface soils at each property contain in excess of 2% asbestos by weight (Peronard, 2000). These soils are subject to disturbance by wind, tracking through and off the property by human activities, and migration from potential new development and construction which can give rise to additional exposure to asbestos fibers (Peronard, 2000). Subsequent inhalation of these fibers by workers, visitors and on-site residents could cause an immediate public health threat (Peronard, 2000). A description of each of these facilities follows.

Former Screening Plant

The Screening Plant occupies approximately 21 acres of property that is now used for combined commercial/residential use. It is likely that amphibole asbestos contamination has spread to the parcels of land (zoned residential) to the west and south of the Screening Plant proper. During operations the screened ore was moved by conveyor belt across the Kootenai River to a rail loading operation adjacent to a Burlington-Northern Rail Line. Amphibole asbestos contamination has also been found in this area. All of these areas are considered part of the Screening Plant.

Up until May, 2000, the Screening Plant was used as a wholesale nursery; a covered storage facility for recreational vehicles, motor boats, and other equipment; and a farm for medicinal mushrooms. It was also the location of the primary residence for the current property owners and is frequently visited by relatives, including their children and young grandchildren. Its main features were the residence (former lab/office building); an approximately one acre, 40 foot high storage building (i.e., the long shed); several green houses; a series of concrete tunnels that house the mushroom farm, and are also used for storage; several smaller storage units; a tree orchard; and a planting operation.

Currently, the Screening Plant is being cleaned-up as part of the EPA's May, 2000 Action Memorandum (see Section 2.5, Cleanup Activities). To date, the majority of contaminated structures have been demolished at the Screening Plant and contaminated soil has been removed as specified in the EPA's Removal Action Work Plan and associated documents. The

contaminated soil and demolition debris has been stockpiled in and adjacent to the long shed due to issues regarding access to the former Vermiculite Mine. The former Vermiculite Mine is EPA's preferred disposal location. This disposal restriction will delay completion of clean-up at the Screening Plant until Summer 2001.

Former Export Plant

The Export Plant occupies approximately 11 acres of property which is now owned by the City of Libby, and leased to a retail lumberyard. Some amphibole asbestos contamination has been found on adjacent parcels of land which had been used as youth baseball fields, but are now unused. During operations the screened ore was trucked from the Screening Plant to the Export Plant, and staged with various other vermiculite related materials between the ballfields and the Export Plant, and in a few other outlying areas. All of these areas are considered part of the Export Plant. Currently, the Export Plant is used as a retail lumber mill. Its main features are five buildings used to house finished and rough lumber, and other construction related materials. These buildings also contain various milling equipment, tools, and a retail center. The buildings are all of basic wood construction. The Export Plant has paved access to Highway 37, and part of the property is now being used as a lay down area in support of improvements to the Highway 37 Bridge across the Kootenai River.

2.4

Recent Agency Activities

An EPA Emergency Response Team conducted an initial site investigation in Libby, MT on November 23, 1999 in response to requests from the State of Montana, Lincoln County Department of Environmental Health, and City officials of Libby, MT, to address questions and concerns raised by citizens of Libby and the media regarding possible ongoing exposures to asbestos fibers as a result of historical mining, processing, and exportation of asbestos-containing vermiculite. Specifically, a series of reports in the Kalispell Daily Interlake and the Seattle Post-Intelligencer as well as other newspapers, alleged that 192 people have died and 375 are now ill from asbestos-related diseases. This section presents Agency activities associated with sampling and community involvement.

The initial site investigation consisted of the following: a brief inspection of the former mine and processing facilities; interviews with local officials and some members of impacted families; an interview with a pulmonologist in Spokane, WA who specializes in the treatment of asbestos related diseases; and the collection of a small set of environmental samples.

This investigation revealed two important findings. First, there are a large number of current and historic cases of asbestos related diseases centered around Libby, MT. The pulmonologist in Spokane alone was currently treating over 200 cases of asbestos related diseases among people who had either lived in Libby or worked at the mine, and had provided care to dozens more who had already died. Out of this physician's cases were 33 incidents of apparently non-occupational exposures. Of these 33, six had no family or other ties to anyone working at the mine. While anecdotal in nature, these findings suggest definitive health effects from the amphibole asbestos found at Libby.

The second finding was the likelihood that significant amounts of asbestos contaminated vermiculite still remained in and around Libby. It is clear that high concentrations of amphibole asbestos remain in the tailings pile and tailings pond at the former mine itself. In addition, visible piles of unexpanded vermiculite remained at the Screening Plant, and the base material of Rainy Creek Road appeared to contain tailings and sands from the mine. Residents described how piles of expanded and unexpanded vermiculite used to sit at the Export Plant, next to two former youth baseball fields. Children were described as having regularly played in and around these piles. Both expanded and unexpanded vermiculite from

waste piles around the mining operations were commonly used by local residents in their yards and gardens as a soil conditioner (Peronard, 2000), and the expanded vermiculite was used as wall and attic insulation in many homes. Descriptions of historic operations of the mine, mill, and processing centers indicated that large amounts of dust and other fugitive emissions were released into the environment when these operations were still running (Peronard, 2000).

These findings led EPA to initiate a larger scale rapid investigation with the following distinct goals:

- Obtain information on airborne asbestos levels in Libby (a limited number of homes, businesses and the Export Plant and Screening Plant) in order to judge whether time-critical intervention is needed to protect public health.
- Obtain data on asbestos levels in potential source materials (at the Export Plant and Screening Plant), and identify the most appropriate analytical methods to screen and quantify asbestos in source material.

Sampling Activities

In December 1999, the EPA Team, in coordination with the Montana Department of Environmental Quality (MDEQ) and the Montana Department of Public Health and Human Services (MDPHHS), began sampling for asbestos in Libby. During the December 1999 sampling, the EPA Team collected soil samples from 35 residences, 3 businesses, and several potential "hot spots" associated with historical vermiculite mining activities in Libby. These hot spots include the 21-acre former Screening Plant area, also referred to as the "Railroad Loading Station" or "Raintree Nursery" located on the northeast side of the Kootenai River approximately 4.5 miles northeast of Libby, and the Export Facility, also referred to as the "Export Plant Area" or "Millworks West", located in the city of Libby. Figure 2-2 is an aerial photograph that shows the location of these areas and the vermiculite mine.

Why Conduct Environmental Sampling?

Sampling activities discussed in Section 2.2 are being conducted to determine if there is a current health risk from exposure to asbestos in Libby. If there is a risk, EPA must determine what actions need to be taken to reduce or eliminate them.

The samples were analyzed for possible contamination with asbestos fibers to identify areas with the greatest potential health risks. For all samples, the positive asbestos results were separated into the following fiber types:

- Asbestiform mineral fibers also known as tremolite-actinolite series of asbestos fibers;
- Chrysotile asbestos fibers (formerly used for floor tiles, pipe insulation, etc.); and
- Other fibers.

The fibers were separated in this way because EPA believes the health risks are greatest for the tremolite-actinolite fibers. Also, tremolite-actinolite asbestos fibers are associated with the vermiculite ore mined in Libby.

The fibers found in air and dust samples were also divided into separate size classes. The size classes are as follows:

- Short fibers - 5 to 10 microns; or
- Long fibers - equal to or greater than 10 microns with a length to width ratio of 5 to 1 (5 microns long to 1 micron wide).

This fiber size division was made because health risks are believed to be greater for long fibers. Because some residents have expressed concern about potential health risks from shorter fibers, EPA is looking at these fibers as well.

Sampling Results

The results from indoor air, dust, insulation, soil, and area schools are discussed in this section.

Indoor Air Results

The initial indoor air results from the December sampling were released the week of January 31, 2000. The initial results from the March indoor air sampling were released the week of June 12. The results for both events are discussed in this section.

December/January Results

In the January 2000 analysis, of the 32 homes and 3 businesses sampled, asbestos fibers greater than 10 microns were found in two homes and at two former vermiculite processing areas, the Export Plant, and the Screening Plant. EPA found tremolite-actinolite asbestos fibers - the kind of asbestos found at the Libby vermiculite mine, at one home and the two former vermiculite processing areas. At the other home, chrysotile asbestos, another type of asbestos fiber formerly used in floor tiles, pipe insulation, etc., was found.

In February 2000, EPA re-analyzed the indoor air samples to identify lower concentrations of asbestos fibers that may be present. From the re-analysis results, EPA identified two additional homes with asbestiform fibers that are associated with the Libby mine.

Results from the February 2000 re-analysis, found 11 locations with asbestiform mineral fibers of low concern, i.e., shorter than 5 microns and seven locations had chrysotile fibers in this same size range. At the other 16 locations, EPA did not detect asbestos fibers in the indoor air samples. The highest indoor air concentration was 0.0003 fibers per cubic centimeter which is about 10,000 times less than the concentrations found 25 to 30 years ago in Libby (CAG, 2000).

The EPA also conducted air sampling in 6 Libby school buildings. No samples had any fibers larger than 5 microns. Three samples found actinolite-tremolite fibers smaller than 5 microns. Chrysotile fibers were found only in the administration building. No samples have been taken to date at school outdoor tracks, that reportedly may contain asbestos (CAG, 2000). However, EPA does plan to sample the outdoor tracks in the future (CAG, 2000).

March/April Results

RESULTS TO BE INSERTED WHEN DATA IS AVAILABLE FROM DATABASE

Dust Sampling Results

Dust was sampled in 34 properties in places such as window sills and beneath refrigerators where dust is expected to collect. Asbestos fibers greater than 5 microns long were found in the dust of 18 of the 34 locations sampled (EPA, 2000b). The table below summarizes the results of the asbestos fibers identified in the dust samples.

| Type of Asbestos Fibers Found | Number of Samples |
|-------------------------------|-------------------|
|-------------------------------|-------------------|

| | |
|--|-----------|
| Asbestiform fiber greater than 5 microns long | 1 |
| Asbestiform fibers less than 5 microns long | 7 |
| Chrysotile fibers greater than 10 microns long | 9 |
| Chrysotile fibers between 5 and 10 microns long | 8 |
| Chrysotile fibers less than 5 microns long | 14 |

source: EPA Fact Sheet "Asbestos Sampling Results." March 2000.

Insulation Sampling Results

EPA took insulation samples from 19 homes and 2 businesses (EPA, 2000b). The results from insulation samples show that 2 of the homes and 1 of the businesses sampled had levels between 1.5 and 2 percent fibers by weight (EPA, 2000b). Seven homes had insulation with less than 1 percent fibers by weight (EPA, 2000b). Fibers were not detected in the insulation from the 13 remaining homes sampled in the first analysis (EPA, 2000b). No correlation was apparent between the asbestos found in the insulation and asbestos indoor air concentrations (CAG, 2000).

Soil Sampling

In December 1999, 176 total soil samples were collected from 35 residential locations. In general, two yard samples, one dirt driveway sample, and one garden sample were taken at each residence. Residential yard samples were composite surface soil collected from a depth of 0 to 2 inches, while the dirt driveway samples were composite surface soil taken from a depth of 0 to 1 inch. Residential garden samples consisted of 0- to 12-inch composite soil samples.

Eighty-five soil samples were collected from 71 stations from the primary Screening Plant area and the horse pasture area south of Rainy Creek and 98 soil samples were collected at the Export Facility during the December 1999 initial investigation. Most of the soil samples at the Screening Plant and Export Facility were surface grab samples collected from a depth of 0 to 2 inches, with co-located soil samples from a depth of 2 to 12 inches collected for about 20 percent of these surface samples. Depending on the size of the waste pile, composite waste pile samples were collected at varying depths, from a few inches up to 2 feet in depth. Results ranged from non-detect to approximately 4 percent tremolite asbestos. Additional soil samples were collected from Rainy Creek Road (52 soil samples) leading to the mine site. Samples on Rainy Creek Road were collected from a depth of 0 to 1 inch.

In March 2000, the EPA Team conducted additional soil sampling in various commercial and potential future residential areas in and around the community of Libby, as well as at the Lincoln County landfill. The March 2000 soil sampling activities are detailed below:

- Screening Plant area - 17 soil samples from 11 stations were collected from a wooded area north of the greenhouses, and 44 samples from 37 stations were collected from an area referred to as "Government Lot 4" south of the horse pasture;

- Export Facility - 29 samples from 17 stations were collected;
- Carney Creek logging area - 15 samples from 5 stations were collected from this logging area adjacent to the lower portion of Rainy Creek Road;
- U.S. Forest Service logging site - 5 samples were collected from this logging area that lies above the "Amphitheater" area adjacent to Rainy Creek Road;
- Kootenai Bluffs Subdivision - 38 samples from 10 lots were collected;
- Zonolite Mountain - 31 samples from 17 stations were collected.

In April 2000, further residential sampling activities were conducted by the EPA Team with the collection of 395 samples at 71 residences. Twelve soil samples were also collected from a triangular-shaped area located between the horse pasture south of Rainy Creek and Highway 37. Results of these 12 samples ranged from non-detect to approximately 8 percent tremolite asbestos.

During June and July 2000, the EPA Team collected the following soil samples: 4 additional samples from the above-mentioned triangular-shaped property; 24 samples from 12 stations in the Screening Plant area; 12 samples from 6 stations located within Government Lot 4 (or "KDC" property south of the Screening Plant); and 16 samples from 2 residences.

In August 2000, soil sampling activities continued in the Libby area. During the month, 12 samples from a residence were collected, as well as 186 samples from the Screening Plant area.

Eighty-five soil samples were collected from 71 stations from the primary Screening Plant area and the horse pasture area south of Rainy Creek and 98 soil samples were collected at the Export Facility during the December 1999 initial investigation. Most of the soil samples at the Screening Plant and Export Facility were surface grab samples collected from a depth of 0 to 2 inches, with co-located soil samples from a depth of 2 to 12 inches collected for about 20 percent of these surface samples. Depending on the size of the waste pile, composite waste pile samples were collected at varying depths, from a few inches up to 2 feet in depth. Results ranged from non-detect to approximately 4 percent tremolite asbestos. Additional soil samples were collected from Rainy Creek Road (52 soil samples) leading to the mine site. Samples on Rainy Creek Road were collected from a depth of 0 to 1 inch.

Libby Asbestos Cleanup

In April 2000, EPA and W.R. Grace & Co. entered into negotiations to determine how the Export Plant and Screening Plant would be cleaned up. However, on April 18, 2000, W.R. Grace & Co. informed EPA that they were not interested in signing a consensual clean-up agreement for clean-up work at 2 former vermiculite processing areas in Libby. On May 23, 2000, EPA issued a Unilateral Administrative Order to W.R. Grace & Co. ordering them to clean up asbestos at their former vermiculite Export Plant next to the old ballfields on U.S. Highway 37. Also on May 23, 2000, EPA signed an "Action Memorandum" stating that EPA will clean up the former W.R. Grace & Co. Screening Plant located at the base of Rainy Creek Road on U.S. Highway 37.

Former Export Plant

In late-July 2000, W.R. Grace began mobilization activities to clean-up the former Export Plant. The former Export Plant is owned by the City of Libby. The City of Libby leases the land to the owners of Millworks West. URS and AC&S (W.R. Grace contractors) inventoried all of the Millworks West property prior to beginning any clean-up activities. Upon completion of the inventory, AC&S personnel began cleaning the inventory using both wet-wiping methods, and vacuum cleaners equipped with high efficiency particulate air (HEPA) filters. Once cleaned, the majority of the inventory was transported to the temporary

Millworks West facility located on Highway 2 South. The remainder of the inventory was placed into storage on site. Any items which could not be adequately decontaminated were transported to the former mine site as contaminated waste.

URS decontaminated the buildings located at the former Export Plant site. The buildings were decontaminated using both wet-wiping methods, and vacuum cleaners equipped with HEPA filters. Once the buildings were adequately cleaned, based on a visual inspection of the building by URS along with a representative of the EPA, a minimum of five final clearance air samples were collected within each building. These samples were analyzed using Transmission Electron Microscopy (TEM) to ensure that fiber concentrations within the building are below clearance criteria. At this time, the planer building, the pole barn, the warehouse, the small shed and the scale barn have been cleared for reoccupancy.

URS began removing contaminated soils from the former export plant site. URS is planning on removing up to 18 inches of soil from the entire site. The soil was removed in 100' x 100' grids. Once a grid was cleared, soil samples were collected from the remaining soil and analyzed for asbestos content using polarized light microscopy (PLM). URS then back filled the grid with clean soil. The contaminated soil is being transported to the former mine site along with any contaminated debris. URS has cleared and back filled all of the grids west of the planer building.

Prior to clean up operations commencing at the former export plant, **KES** (define), with an EPA representative, collected ambient air samples along the perimeter of the site to determine background fiber levels on the site. Once clean up operations commenced and a regulated area was established, the perimeter samples were collected on a daily bases, and will continue to be collected whenever work at done at the site. The perimeter ambient air samples are collected to ensure that fibers are not being generated by the clean-up operations and migrating off site. In addition, KES collects personal air samples on workers within the regulated area to ensure that workers are not being exposed to elevated levels of asbestos fibers.

All of the work being performed at the former export plant by URS was performed under the direct supervision of an EPA representative. All modifications, deletions, or additions to the URS Work Plan for this effort must be approved by the EPA, or the EPA's representative prior to being implemented by URS or it's representatives.

Former Screening Plant

In June 2000, the EPA and their contractors began mobilization activities for the clean-up of the former Screening Plant. The first activity completed as part of the clean-up was a comprehensive inventory of the contaminated personal property at the former Screening Plant. Identified contaminated property was decontaminated prior to leaving the former Screening Plant, or, if unable to be decontaminated as determined by an asbestos cleanup expert, was placed aside for disposal. Upon completion of the inventory clean-up of the former Screening Plant was initiated.

Starting in July 2000, contaminated structures were demolished. Demolition involved tearing down building utilizing a large excavator, loading demolition debris into dump trucks, and stockpiling of demolition debris to a central location on the former Screening Plant. During demolition the structures and equipment were constantly wet down to suppress dust. In addition, to insure personnel conducting the demolition were using proper respiratory

protection they were monitored with personal air monitors. Finally, the site perimeter was continuously monitored during demolition activities to insure that asbestos contaminated dust was not leaving the former Screening Plant.

Following demolition of structures, contaminated soil, as identified during site investigations, was removed. Contaminated soil was removed in 100' x 100' grids. Once a grid is cleared, soil samples are collected from the remaining soil and analyzed for asbestos content using polarized light microscopy (PLM). Contaminated soil was removed to a depth of approximately four feet on the north side of the former Screening Plant. Because contaminated soil remained on this side of the property, it was covered with a membrane material. This membrane delineates clean soil from asbestos contaminated soil. On the southern side of the site, contaminated soil was removed to a depth of approximately 18 inches. Sampling on this side of the site identified it as clean (i.e., no asbestos contaminated soil) following excavation activities. Contaminated soil removal involved excavation with continuous dust suppression, and stockpiling of soil into the long shed on the former Screening Plant. As was the case for structure demolition activities, personnel and the site perimeter were continuously monitored.

Upon completion of contaminated soil removal, clean-fill material was imported to cover the north side of the former Screening Plant. The southern side of the site was not covered due to the fact that it was identified as clean through sampling, and because of the shallow depth of excavation. The site was shut-down during Winter 2000 - 2001. Shut down activities involved covering the contaminated soil stockpile, placement of erosion controls including trenches, hay bales, sedimentation basins, and silt fencing. The former Screening Plant will be monitored during winter months to insure that erosion controls are effective and to conduct necessary maintenance activities.

The final disposal location for the contaminated soil and demolition debris has not been determined. As a result, the clean-up of the former Screening Plant will not be completed until Summer 2000. At that time, it is anticipated that a disposal location will be identified and contaminated soil and demolition will be removed to that location.

Libby Community Environmental Health Project

The U.S. Agency for Toxic Substances and Disease Registry (ATSDR) in collaboration with the Montana Department of Public Health and Human Services, the Lincoln County Department of Environmental Health, the MDEQ, and the EPA conducted a Community Environmental Health Project to address human health concerns related to possible exposure to asbestos in the Libby, MT area. The following public health actions were developed and implemented by ATSDR in coordination with these other agencies:

- A medical testing program for people who lived or worked in the Libby area during the time of highest exposure.
- Collection and analysis of medical and epidemiologic information to understand the nature and extent of asbestos-related disease in the community.
- Cooperation with other involved agencies to recommend actions that can be taken to limit further exposure to asbestos and to mitigate or prevent adverse health effects.
- Provide residents complete and current information on asbestos-related health risks. Work with area physicians and other medical professionals to help them obtain up-to-date information on the diagnosis and treatment of asbestos-related diseases.

The Medical Testing Program was a joint effort designed to identify and examine people whose health may have been affected from having been exposed to asbestos in and near Libby, MT. The program is also evaluating participant's current health status.

ATSDR provided a public comment period in March and April 2000 inviting the public to provide comment on the medical testing protocol to be used in the Medical Testing Program. The medical testing began in June 2000 and lasted approximately 4 ½ months. The testing included the following:

- A set of chest x-rays;
- A pulmonary function test; and
- Questions about personal medical history.

Participants will be notified of the interview results, breathing test, and initial x-ray results via letter at the end of the project. The x-ray films are reviewed first by a local radiologist and then by three independent radiologic experts (not from Libby). A letter explaining the x-ray results will be sent to each participant at their home address. The films and a copy of the results letter will be forwarded to the doctor specified by the participant. If a participant is confirmed to have symptoms consistent with asbestos-related lung problems, the participant will be referred to a physician (the participant's personal physician or another qualified physician). Participants who have no current lung problems or symptoms will be instructed to contact their personal physicians if they develop breathing problems in the future.

Those eligible for testing include 1) former employees of W.R. Grace/Zonolite in the Libby area and household members of former employees, and 2) persons that are at least 18 years old and lived, worked, or attended school in Libby for at least 6 months prior to December 31, 1990.

Community Involvement Activities

EPA has conducted the following community involvement activities:

- Conducted community interviews;
- Facilitated formation of Community Advisory Group (CAG);
- Established Libby Information Center;
- Conducted public meetings;
- Sponsored open houses;
- Provided direct informational mailings;
- Published weekly advertisements;
- Published information on the Internet; and
- Co-sponsored and co-planned a 3-day Conference on Asbestos and Public Health

A description of each of these activities follows.

Conducted Community Interviews

EPA conducted approximately 80 community interviews with residents who had their homes sampled and other Libby community members and leaders. The objective of the interviews

was to find out how the interviewee or their family members may have been exposed to asbestos and to assess community concerns about asbestos and find out how to best keep the public informed.

Facilitated Formation of Community Advisory Group

EPA facilitated the formation of a Community Advisory Group (CAG). The CAG serves as a public forum for representatives of diverse community interests to present and discuss their needs and concerns related to the Libby Site. The CAG is designed as a mechanism for all affected and interested parties in a community to have a choice and actively participate in the decision-making process. A CAG allows EPA to exchange information with members of the affected community and encourages CAG members to discuss site issues and activities among themselves. The CAG also can provide a public service to the rest of the affected community by representing the community in discussions regarding the site and by relaying information from these discussions back to the rest of the community.

The first CAG information meeting was held on January 20, 2000 at the Libby City Hall. A CAG planning meeting was held on February 3, 2000. The CAG requested EPA to help them retain the services of a qualified facilitator. Mr. Gerald Mueller, a qualified facilitator chosen by a 5-person subcommittee of the newly formed CAG, was introduced at the February 3, 2000. During the planning meeting, the purpose of the CAG, the roles and responsibilities of the members, and the meeting procedures were established.

The CAG meetings are currently held on the second and fourth Thursdays of each month. Community members continue to set the agendas and discuss issues relevant to the investigation and cleanup of asbestos in Libby as well as the community Medical Testing Program. Summaries of the meetings are posted on the EPA web page at: <http://www.epa.gov/region8/superfund/libby> and on the City of Libby web page at: <http://www.libbymontana.com/public.html> See Appendix A for a list of CAG members.

Established Libby Information Center

EPA officially established a local Information Center in Libby, MT on December 16, 1999. The Center was established to provide the community with information about EPA's sampling and clean-up activities and the potential health effects from asbestos. The Information Center is staffed full-time by Linda Newstrom and is located at 501 Mineral Avenue. The telephone number at the Information Center is (406) 293-6194. The EPA Information Center in Libby can also be accessed on the Internet at: <http://www.libbymontana.com/public.html>. The Information Center hours are as follows.

| | |
|-----------|-----------------|
| Monday | 8:30 am-5:00 pm |
| Tuesday | 8:30 am-5:00 pm |
| Wednesday | 8:30 am-5:00 pm |
| Thursday | 8:30 am-5:00 pm |
| Friday | 8:30 am-5:00 pm |

ATSDR shares the office in Libby with EPA. Their receptionist can be reached at (406) 293-2728.

Conducted Public Meetings

EPA held the following four public meetings to date:

- December 1, 1999;
- March 22, 2000;
- February 2, 2000; and

- July 13, 2000.

All four meetings were held to discuss sampling results with the community. The meetings were well-attended and consisted of a presentation of EPA's activities, sampling results, and future plans and also provided a question and answer period.

Sponsored Open Houses

EPA held an Open House on March 21 through March 23, 2000 at the EPA Information Center in Libby. During the Open House, EPA staff were available to answer questions regarding the sampling activities in the Libby area.

Provided Direct Informational Mailings

EPA mailed approximately 3,800 postcards to Libby residents and businesses. The postcard included a business reply postcard that requested recipients to return the card if they wanted to be removed from the mailing list or needed to provide mailing name and address corrections.

EPA to date has also mailed 2 informational fact sheets to area residents and businesses. The first fact sheet provided information about the asbestos sampling activities being conducted in the Libby, MT area. This fact sheet was mailed in February 2000 to approximately 3,800 addresses. The second fact sheet provided information on the asbestos sampling results. This fact sheet was mailed in March 2000 to approximately 3,600 addresses. Both fact sheets are available in Adobe Acrobat format on the Internet at: <http://www.epa.gov/region8/superfund/libby>. They are also available in the EPA Information Center in Libby, MT.

Published Weekly Questions and Answers

Beginning in February, 2000 EPA placed weekly frequently asked Questions and Answers in The Montanian, The Western News, and the Tobacco Valley News. The recognizable format allows people to easily find and refer to the paid ads. They offer information on a variety of subjects such as sampling, cleanup, medical testing, Community Advisory Group Meetings etc.

Published Information on the Internet

EPA publishes information on the Site on both the EPA web page and the city of Libby web page. The addresses for these web pages are as follows:

- <http://www.epa.gov/region8/superfund/libby>; and
- <http://www.libbymontana.com/public.html>.

Co-sponsored and co-planned a 3-day Conference on Asbestos and Public Health

At the request of community members, EPA initiated the planning of a Conference on Asbestos and Public Health in Libby. The Conference was funded primarily by EPA, but planned in conjunction with many federal, state, and local agencies and residents of Libby. It was held on September 21 - 23

in Libby, Montana at the VFW Community Hall. The Conference included presentations by many authorities on health and environmental topics related to asbestos. Between 50 and 100 area residents attended at least a portion of the conference.